REMARKS

Claims 1-6 are pending. Claims 1 and 6 have been amended. No new matter has been added. Reconsideration and allowance of the above-referenced application are respectfully requested.

Claims 1-3 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brailsford '068, in view of Posey '523, and further in view of Bornand '614. Claims 4 and 5 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Brailsford '068, in view of Posey '523, and further in view of Bornand '614 and Tanikoshi '780. These rejections are respectfully traversed with respect to amended independent claims 1 and 6.

Claims 1 and 6, as amended, recite a MEMS relay having an actuation plate or a spring beam that is actuated with a magnetostatic actuation force. In this configuration, the actuation plate or the spring beam is actuated by a magnetostatic force to be aligned with an applied magnetic force. As shown in Table 1 of the disclosure, the micromachined magnetostatic switch produces much larger contact forces than is produced by the conventional electrostatic or electromagnetic microswitches. The appropriate use of the magnetostatic force to align the actuation plate may reduce contact resistance and thus support much larger operating currents.

In the present disclosure, the MEMS magnetostatic switches and the systems in which they are used are designed to produce

large actuation forces. This leads to several additional benefits. Larger actuation forces allow a stiffer actuation plate, which leads to shorter switching time, higher g-force tolerance, and greater contact breaking force. Greater contact breaking force, in turn, leads to increased switching lifetime. Large actuation forces also provide the large contact forces, typically between 100 μN and 1 mN, required to yield an acceptable contact resistance when common contact materials, such as silver and gold, are used. The presence of large actuation forces also allows the switches to be designed with large gap distances between contacts, and may increase device breakdown voltage.

The cited references, alone or in combination, fail to teach or suggest using magnetostatic force to actuate the contacts. Bornand seem to suggest using conventional electromagnetic force to actuate the microswitch. None of the other cited references teach or suggest using magnetostatic force to actuate MEMS switch.

Accordingly, in view of the above amendments and remarks, all of the pending claims should be in condition for allowance. A formal notice to that effect is respectfully solicited.

Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 6-28-00

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